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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,304	03/30/2004	Masaaki Nakayama	249-336 (AMK)	1823
23117 7590 05/05/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
AFZAL, SARANG				
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3726				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/812,304

Applicant(s)

NAKAYAMA ET AL.

Examiner

SARANG AFZALI

Art Unit

3726

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 1/30/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14-19 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 and 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10, 11 and 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20090409, 20090130
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The applicant's response filed on 01/30/2009 has been fully considered and made of record.

Claim Objections

2. Claim 10 is objected to because of the following informalities:

Claim 10, line 11, the phrase "in an amount of 20-40% by weight" should read - - in an amount of 20 to 40% by weight - - in order to be in a consistent format as the rest of the claimed ranges. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10, 22, 24 and 25 are rejected under 35 U.S.C. 103(a) as obvious over Kaiser et al. (US20030181302A1) in view of Ohshima et al. (US 5,763,345).

As applied to claims 10 and 25, Kaiser et al. teach a disc roll comprising: a plurality of annular disc members 29 each defining a hole and having a peripheral surface; and a rotary shaft 17 fitted into the holes of said annular disc members 29 by insertion, whereby the peripheral surfaces of said disc members serve as a conveying surface of the disc roll, wherein said disc members 29 comprise an inorganic fiber, mica

and a clay (paragraph [0010], last three lines). Kaiser et al. teach the inorganic fiber and clay are present in the claimed ranges (see paragraph [0056], last three lines) and mica is present in the claimed range (see paragraph [0056], last three lines).

However, Kaiser et al. do not explicitly teach that the clay has particles with a particle size of 5 μm or larger of not higher than 30% by weight based on the weight of the clay and that clay being elutriated (claim 10) and the claimed impurity content of 10% or less (claim 25).

Ohshima et al. teach that it is well known in the art for natural clay to contain an average particle size of 0.5 μm after purification by elutriation (col. 1, lines 27-28 & 35-36) and that clay should ideally have a high degree of plasticity and be free of impurities to provide high precision forming of complicated shapes (col. 1, lines 21-25).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Kaiser et al. with elutriated natural clay having an average particle size of 0.5 μm , and a clay free of impurities (within the claimed range of 10% by weight or less) as taught by Ohshima et al., in order to form a high precision disc roll comprised of desired and suitable material content.

Note that Ohshima et al. teach that, in general, finer clay particles result in smooth mobility, uniform molding density, and a minimum deformation due to drying and firing (col. 2, lines 29-35).

Furthermore, Ohshima et al.'s explicit teaching of clay content of particles with an average particle size of 0.5 μm makes it mathematically impossible to have clay content

of particles with a particle size of 5 μm or larger in an amount of 30% or higher by weight based on the weight of the clay.

In addition, the Applicant seems to see no criticality in the claimed content of the impurities of 10% and is disclosing a wide range of embodiments wherein the clay has a content of impurities of 10% by weight or less, 5% by weight or less and more preferably of 1% by weight or less based on the weight of the clay (specification, page 20, first paragraph).

As such, finding the exact impurity content of the clay would have been obvious to one of ordinary skill in the art at the time of invention as matter of design choice, since the Applicant has not disclosed that only the claimed content range would provide any benefits and is done for any particular reasons and as a matter of fact, the Applicant discloses that the invention would equally perform well with either content of impurities of 10%, 5% , 1% or for that matter the range taught by Kaiser et al./Oshima et al. as discussed above.

As applied to claim 22, Kaiser et al./Oshima et al. teach the invention cited. Kaiser et al. further teach that the clay is present in the range of 40-50% (see paragraph [0056], last three lines) which overlaps the claimed range of 30 to 40%.

As applied to claim 24, Kaiser et al./Oshima et al. teach the invention cited above including the clay with particle size of 0.5 μm or larger not higher than 30% by weight

based on the weight of the clay but does not explicitly teach the claimed range of not higher than 15%.

However, the Applicant seems to see no criticality in the claimed content of the particle size of 5 μm or larger and is disclosing a wide range of embodiments wherein the clay has a content of particles with a particle size of 5 μm or larger not higher than **30%** in claim 10, not higher than **15%** in claim 24, not higher than **10%** and most suitably containing **no particle component** having a particle size of 5 μm or larger (specification, page 19, first paragraph).

As such, finding the exact clay content of particle size of 5 μm or larger would have been obvious to one of ordinary skill in the art at the time of invention as matter of design choice, since the Applicant has not disclosed that only the claimed particle range would provide any benefits and is done for any particular reasons and as a matter of fact, the Applicant discloses that the invention would equally perform well with either not higher than 30%, not higher than 15%, not higher than 10%, 0% or for that matter the range taught by Kaiser et al./Oshima et al. as discussed above.

5. Claims 11 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaiser et al. in view of Ohshima et al., as applied to claim 10 and further in view of Asaumi et al. (US 4,533,581).

Kaiser et al./Ohshima et al. teach the invention cited above with the exception of the mica being muscovite and the claimed particle size range.

Asaumi et al. teach that it is known to use muscovite mica with size distribution of 10 to 100 μm in disc rollers (col. 2, lines 17-22).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Kaiser et al./Ohshima et al. with muscovite including the claimed particle size range, in light of the teachings of Asaumi et al., in order to provide a disc roll having an excellent heat resistance property as suggested by Asaumi et al.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaiser et al. in view of Ohshima et al., as applied to claim 10 and further in view of Yoshida et al. (US 4,533,968).

Kaiser et al./Ohshima et al. teach the invention cited above with the exception of the clay being kibushi clay.

Yoshida et al. teach that it is known to use binding clays such as Kibushi clay in order to improve the binding and thus increasing the mechanical strength of the formed article (col. 2, lines 58-650).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Kaiser et al./Ohshima et al. with Kibushi clay, in light of the teachings of Yoshida et al., in order to provide a disc roll having an improved plasticity during the forming and increase mechanical strength as suggested by Yoshida et al.

Response to Arguments

7. Applicant's arguments with respect to claims 10-13 and 20-21 filed 1/30/2009 have been considered but are not persuasive.
8. Applicant's arguments, see "Remarks/Arguments", page 1, paragraph 3, is mainly that "such specific effects as set forth above and defined in the claims evidence the criticality of the claimed range(s), and Applicants submit that the claims are not obvious from the disclosures of the cited references."

As such, Applicants are not providing any new arguments rebutting the validity of the cited art in rejecting the claims except that the claimed ranges are critical to the Applicants' invention and that one of ordinary skill in the art would have not found it obvious to arrive at the claimed ranges from the disclosure of the cited art.

The Examiner respectfully disagrees with this argument. Although the claimed ranges may be critical, however, the Applicants have disclosed in numerous sections of the specification that there is a wide range for each claimed "content range" within which the invention would still perform equally well. As such, one of the ordinary skill in the art would have found it an obvious matter of design choice to apply these critical ranges in the cited art in order to provide a high precision disc roll with material contents that include excellent heat resistance property and high degree of formability.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Comparative Examples 1B-3B, 6B and Examples 4B and 5B) are not recited in the

rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARANG AFZALI whose telephone number is (571)272-8412. The examiner can normally be reached on 7:00-3:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sarang Afzali/
Examiner, Art Unit 3726
4/21/2009

/DAVID P. BRYANT/
Supervisory Patent Examiner, Art Unit 3726